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Modular cyclonic fencing arrangement

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ABSTRACT

This invention is a fencing panel (1) comprising a frame that has an uppermost and lowermost frame element 2a and 2b and side frame elements 2. The frame holds
5 at least one fencing sheet 3 within the frame and there are one or more rails 6 and 7 to reinforce the frame and hold the fencing sheets 3 within the frame. The rails span between any of the adjacent frame elements. The design of the fencing panel and according to this invention is much more rigid and able to withstand higher wind loads.



THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A fencing panel comprising:
a frame, having an uppermost and lowermost frame elements and side frame
5 elements;
at least one fencing sheet located within said frame,
one or more rails to reinforce said frame and hold said fencing sheets within
said frame, the rails spanning between any of the adjacent frame elements.
- 10 2. A fencing panel according to claim 1, wherein said one or more rails extend
between any two side frame elements.
3. A fencing panel according to claim 1, wherein one or more rails are located
between said vertical frame elements and substantially parallel to said uppermost
15 and lowermost frame elements.
4. A fencing panel arrangement according to claims 1 and 2, wherein said one or
more rails extend between said uppermost and lowermost frame elements.
- 20 5. A fencing panel according to claim 1, wherein said one or more
rails extend from a lower corner to a diagonally opposite higher corner.
6. A fencing panel according to any one of claims 1 to 5, wherein said uppermost
and lowermost frame elements, side frame elements and rails have a C-shaped cross-
25 section.
7. A fencing panel substantially as described in the specification with reference
to and as illustrated by the accompanying representations.

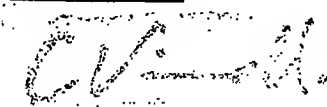
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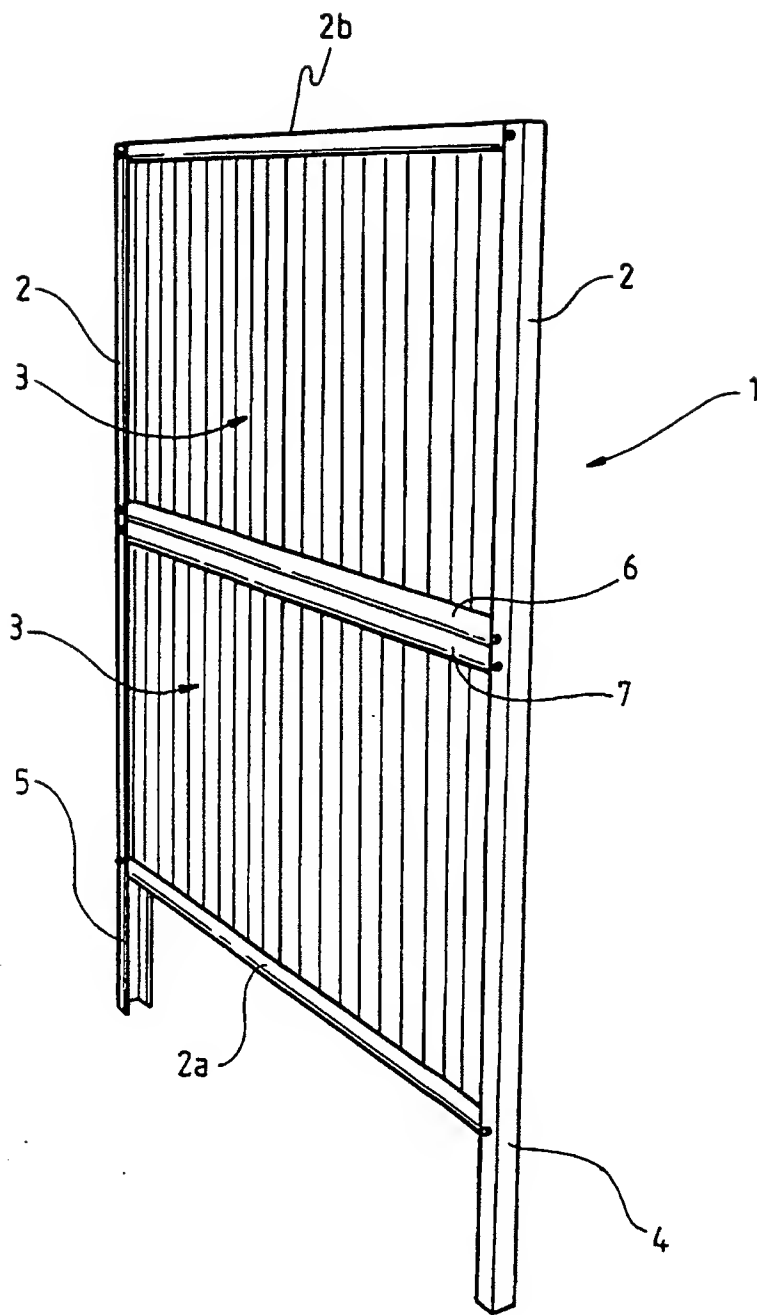


Fig 1

**AUSTRALIA
PATENTS ACT 1990**

COMPLETE SPECIFICATION

FOR A STANDARD PATENT

ORIGINAL

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Adelaide, South Australia, Australia**


Invention title: **MODULAR CYCLONIC FENCING ARRANGEMENT**


Details of Associated Provisional Application Nos: PQ 6265 dated 17 March 2000


The following statement is a full description of this invention, including the best method of performing it known to us.

The present invention relates to an improved fencing arrangement and in particular to strengthening fencing arrangements for use in areas subject to extreme weather conditions.

5 At the present time, fencing arrangements consist of a plurality of rectangular frames having one or more panels attached to the said frame/s. Although this fencing arrangement can endure normal weather conditions without being damaged, these fencing arrangements can be severely damaged during extreme weather conditions, such as during a cyclone. Either the panels can be dislodged and lost, or
10 the frame can become damaged or disfigured. Therefore it is desirable to strengthen the panels and the frame in a cost-effective and simple manner.

 The following invention overcomes the abovementioned problem by providing additional strength to the fencing arrangement in a cost-effective and
15 simple manner.

 In the following, the term "rail" is also taken to mean bar, rod roll formed section, tubular section or any other similar type of structural member.

 20 In this invention, a fencing panel having a frame and one or more fencing sheets further comprises a reinforcement rail spanning the width of the frame while also being located adjacent a fencing sheet, the reinforcement rail provides additional strength to the fencing panel to keep the fencing panel intact during extreme weather conditions. In addition, the rail may provide additional contact points to which a
25 fencing sheet may be attached.

DESCRIPTION OF THE INVENTION

The invention is now described in detail in conjunction with an illustrative embodiment shown in the accompanying drawings.

30 Fig. 1 is a side elevational view of the cyclone fencing panel,
Fig. 2 is a front side view of the cyclone fencing panel,

Fig. 3 is a cross-section view of the fencing panel along line 3-3 shown in Fig. 2, and

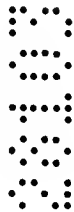
Fig. 4 is a detail cross-section view of the fencing panel along line 3-3 show in Fig. 2.

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With reference to the accompanying drawings, the fencing panel 1 comprises a generally rectangular frame made up of a pair of vertical side frame elements 2, a lowermost frame element 2a and an uppermost frame element 2b. One or more sheets 3 are located within the rectangular frame.

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Rails 6 and 7 are attached to the frame. Each end of rails 6 and 7 is secured to a respective side frame element 2.



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In this embodiment, the side frame elements 2, lower and uppermost frame elements 2a and 2b and the rails 6 and 7 are roll formed sections having a generally C-shaped cross-section. The sheets 3 are a corrugated or roll formed section that is typically used in the fencing industry where the width of the sheet 3 (ie the height of the corrugations or other roll formed sections) is substantially equal to the opening of the rails 6 and 7 and uppermost and lowermost frame elements 2a and 2b so that the sheets 3 locate snugly within the open channels of the rails 6 and 7 and the uppermost and lowermost frame elements 2a and 2b.



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The side frame elements 2 have extensions 4 and 5 which are used for supporting the fence panel 1. The extensions 4 and 5 have the required length to enable them to locate within a concrete footing which is commonly used to support fence posts.

25

Width of the fence panel 1 may be such that a standard width sheet 3 may be used. Alternatively, the sheet 3 may comprise a number of sheets which are joined to form the sheet 3 which is located within the fence panel. A number of sheets may be joined by fastening means such as pop rivets or may be joined using a crimping or welding process.

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In order to construct the fence panel 1, the lowermost frame element 2a has a side frame element 2 secured to it at each end. Threaded fasteners such self tapping screws or bolts may be used. The sheet 3 is then slid into place so that it locates within the opening of the channels used to form the lowermost and side frame elements 2a and 2.

Next, the rail 7 is secured in place so that the top edge of the sheet 3 locates within the channel of the rail 7. As with the lowermost frame element 2a, the rail 7 is secured to the side frame elements 2 by self tapping screws.

The next rail 6 is located on top of the rail 7. It is also secured using self tapping screws. This then allows the second sheet 3 to be slid in place and it is located in a similar manner to the lower sheet 3. The uppermost frame element 2b is then secured using self tapping screws to the side frame elements 2 so that it locates over the top edge of the sheet 3.

Preferably, both the lowermost frame element 2a and the rails 6 and 7 are provided with drainage slots or perforations along their length. These perforations ensure that water and other condensation can drain away to minimise corrosion damage.

Where maximum rigidity is required, it may also be preferable to secure the sheets 3 to the rails 6 and 7 and the lowermost and uppermost frame elements 2a and 2b. This can most easily be achieved by self tapping screws. In the embodiment shown in the accompanying representations, it has been found that a self tapping screw located midway in each of the horizontal members would be sufficient to provide the necessary additional rigidity. In addition, the fixing of the sheets 3 at these midpoints reduces movement of the sheet within the fence panel 1.

The rails 6 and 7 provide the additional rigidity for the fence panel 1. In addition to providing extra rigidity for the fence panel 1 frame, it also more securely holds the sheets 3 to the fence panel 1.

Although this embodiment is shown using horizontal rails 6 and 7, other arrangements would be possible. These may include diagonal or vertical rails.

5 This embodiment shows a pair of sheets located within a fence panel. However, the broadest form of the invention is not limited to this particular arrangement and the invention may comprise three or more sheets located within the fence panel with the corresponding number of reinforcement rails.

10 In order to provide additional rigidity, separate fence posts comprising tubular sections may be used to support fence panels 1 on either side of the post.

Conveniently, the fence post may comprise square hollow sections and the side frame elements 2 may be secured to the posts prior to attachment of the other components. In this case, the fence post will be the same length of the side frame elements 2 including the extensions 4 and 5.



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As will be seen from the above description, the invention provides a convenient and simple design which has the required strength for the fence panel, particularly in those areas which are prone to higher wind loadings.



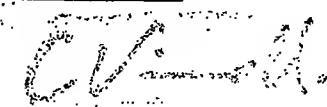
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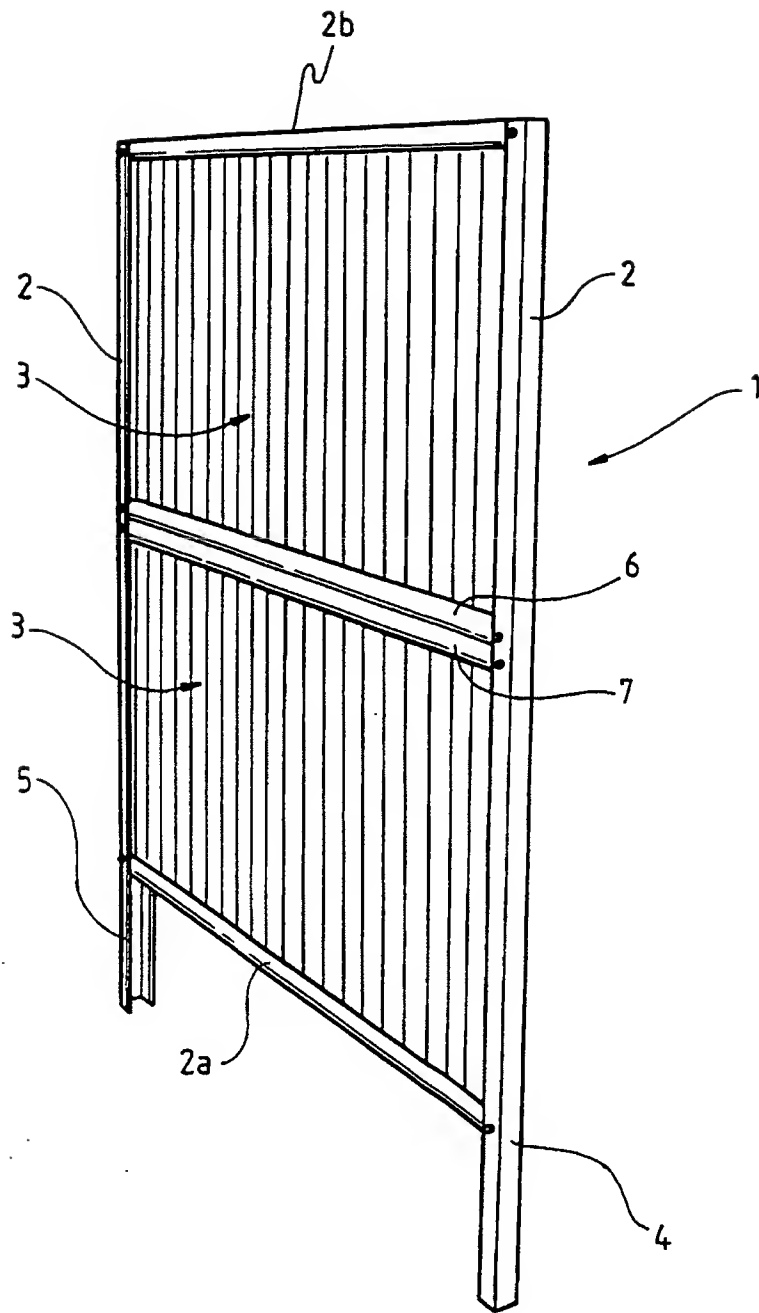


Fig 1

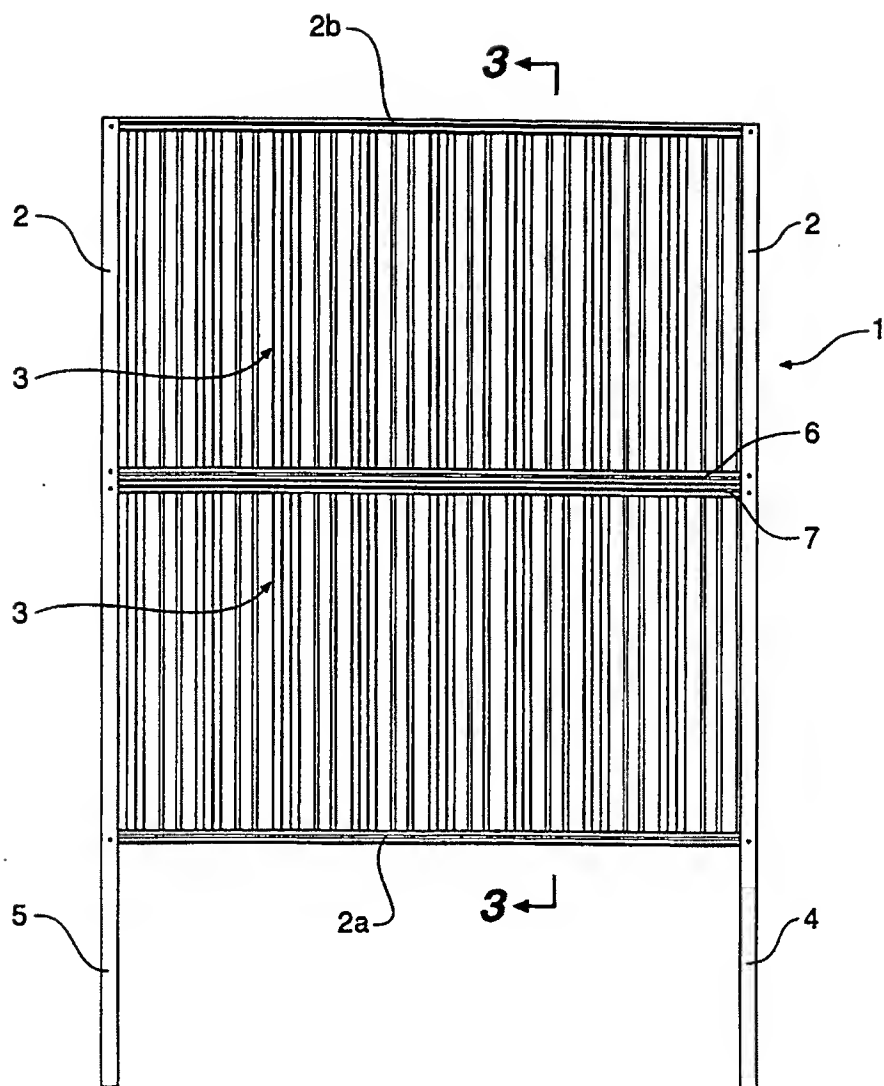


Fig 2

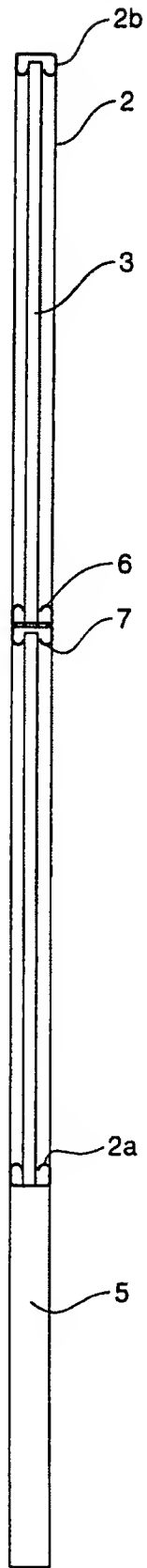


Fig 3

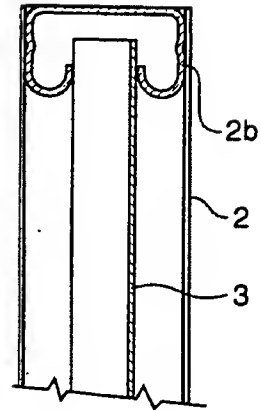


Fig 4